micros® Systems, Inc.

Digital Menu & Marketing System
Setup Guide

The information in this setup guide relies on the manufacturer installation manuals to install the display mounts and hang the displays, but recommends specific methods of positioning the DDC and cables to provide access for service.

This document is not intended as an alternative to the installation instructions that accompany the individual hardware components but rather a supplement.

Declarations

Warranties

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Printing History

New editions of this manual incorporate new and changed material since the previous edition. Minor corrections and updates may be incorporated into reprints of the current edition without changing the date or edition number.

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Section 1: Mounting Digital Menu System Hardware

Install the Landscape or Portrait Display Mount

When installing the display mount, it is imperative that the mount is anchored to studs at all four mounting points. Dry wall can not support the weight of the displays. If the studs are too far apart, reinforcement is required.

A pair of 2x4's running between studs with the display mount attached to the 2x4's is acceptable. Be sure to set the display mounts so that they are perfectly level. A crooked display will be evident, especially if mounted next to other displays.

Install the portrait or landscape display mount to a wood studs or concrete wall as described in the instructions provided with each mount. If installing multiple landscape displays, Rail Connectors are recommended. See below.

When installing the **landscape** display mount (MICROS P/N 300264-400) the rails must be offset to accommodate the DDC (Digital Display Controller). As pictured below, the DDC is mounted to the top rail and hangs below bottom rail. When installing two displays side-by-side, positioning the DDC on the outside of the display mount may create easier service access.

Install the Rail Connectors (Landscape Mounts Only)

The rail connectors (MICROS P/N 600526-045) are recommeded when installing two or more **landscape** mounts side-by-side with no space in between.

The instructions supplied with the rails describe how to install the rail connectors on both the top and bottom rails. However, because the DDC is suspended from the top rail, the rail connector should be used to connect the **top rails only**.

Install the DDC Rail Bracket

The DDC mounting bracket (MICROS P/N 600526-043) consists of two pieces: the rail bracket and “L” bracket. Attach the rail bracket to the top rail of a **landscape** mount (left) or the bottom rail (right) of a **portrait** mount. Secure the rail bracket to the rail with the set screws. The “L” bracket and DDC can be installed and cabled after the display is mounted.

Install the Power Protection Device

The power protection mount (MICROS P/N 600526-044) consists of a pair of hooks and four Velcro squares. The hooks allow the power protection device to reside on the bottom rail of a portrait or landscape mount.
Attach two of the included Velcro squares to the widest points on the rear of the SmartPower filter (MICROS P/N 700247-059) housing as shown below (left).

Place the two remaining squares on each bracket so that they will line up with the squares on the filter. Then attach the power protection device to the brackets.

Pre-position the power protection device on the bottom rail near the center of the rectangle created by the rails and the wall mount uprights. The power protection device is shown installed on the landscape mount (left) or portrait mount (right).

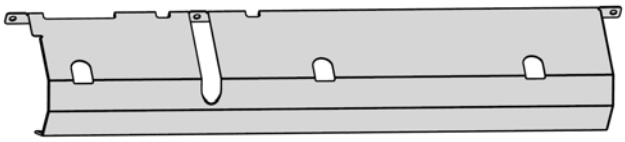
The power protection device and three-way outlet is composed of heavy gauge cable but will fit in the space behind the display.

This completes installing the landscape or portrait mount and pre-positioning the power protection device and DDC rail bracket.

In the following steps, the AC and Video Cable(s) are pre-mounted to the monitor before installation. After the display is suspended, the DDC is installed and cables attached.

Attaching the Cables and Cable Cover to the Landscape Display

Place the monitor face down to access the connectors and pre-install the cables. Be careful to protect the face of the monitor.



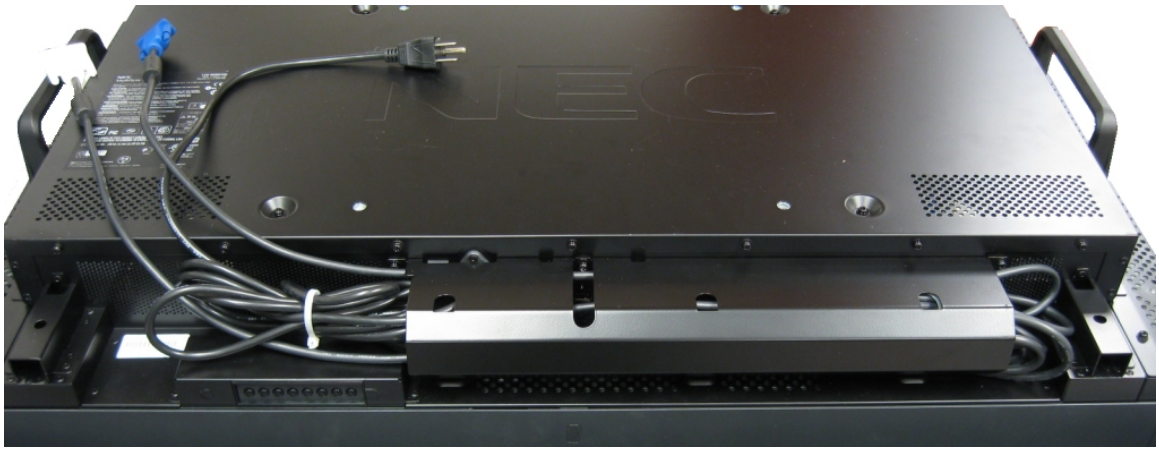
Cable cover

Pre-install the AC Cable and Video cable(s) required for this display. A single VGA is included with the monitor. To use a DVI cable (recommended for best image) order MICROS P/N 300107-016.

Be sure to secure all video cables to the display with the jack screws.

Details on attaching the cable cover can be found on page 13 of the display User's Manual at https://portal.micros.com/sites/hardware/3rdparty/Document%20Library5/1/P401_P461.pdf

The image below shows the display with all cables installed and the cable cover attached. Tie wraps are used to bundle excess cable and prevent hanging below the display. See the next page attach the upright brackets to the rear of the display.



Hanging the Display on a Landscape Mount

Install the Left/Right interface brackets using the 1/2” (.500) spacers provided in the kit. The 1/2” spacers are required to provide service access and improve air circulation behind the display.

Details for attaching the interface brackets and spacers can be found on page 6 of the landscape mounting bracket installation guide, supplied with the mount.

Instructions can also be found on-line at http://downloads.chiefmfg.com/MANUALS-I/MSA_MTASeries-I.pdf (refer to Figure 5).

The images below show the required 1/2” spacers installed between the interface brackets and the rear of the monitor.

Be sure not to pinch any wires when positioning the display on the mount .

When hanging the display, be make sure the interface brackets are located to either side of the vertical supports as shown on the right. See Figure 8 in the documentation.

Place the top hooks on the top rail. The lower hooks can rest on the bottom rail if the until it is determined the display is centered on the mount.

When the display is positioned on the center of the mount, gently pull downward on both straps while swinging them inward towards the wall and the bottom hooks will latch onto the lower rail. See Figure 9 in the portrait mount installation guide.

To release the display from the lower rail for installation of the DDC, or service access, pull down on both straps until the locking mechanism releases and pull out. The display will swing out.

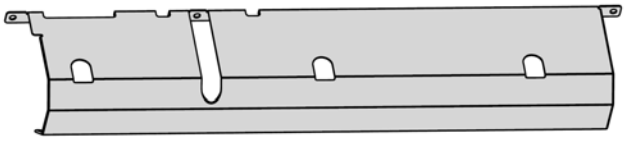
If necessary, adjust the Velcro pull straps so that they do not extend beyond the bottom of the screen.

Locking the Landscape Display

After the display has been hung, lock it in place for theft prevention. A locking bracket comes with landscape display mounts. It fits on the display-side bracket. A pad lock is not recommended because it can prevent service access. A hex bolt is used by the MICROS contract installer and is recommended.

Attaching the Cables and Cable Cover to the Portrait Display

Place the monitor face down to access the connectors. Be careful to protect the face of the monitor.


Cable cover

Pre-install the AC Cable and video cable required for this display. A single VGA cable is supplied with the monitor les required for this display. For single display systems, DVI is recommended over VGA for better picture quality.

Be sure to secure the video cable to the display with the jack screws

Details on attaching the cable cover can be found on page 13 of the display User's Manual at https://portal.micros.com/sites/hardware/3rdparty/Document%20Library5/1/P401_P461.pdf

Hanging the display on a Portrait Mount

Portrait mounts are similar to landscape mounts in that they require the ½" spacers, and use a hook system.

Install the Left/Right upright brackets using the 1/2" (.500) spacers.

Details for installing portrait upright brackets mounts can be found on page 6 (Figure 5) of the portrait mount installation guide http://downloads.chiefmfg.com/MANUALS-I/MTAPU-I.pdf.

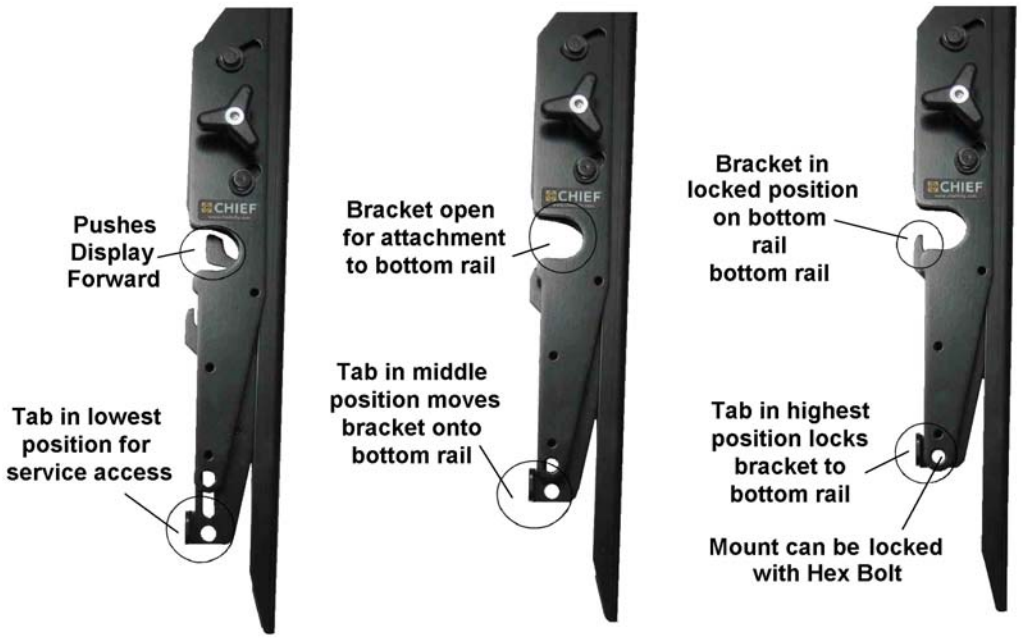
Be sure not to pinch any wires when the display is in position.

When hanging the display in **portrait mode**, be sure that the **NEC logo is positioned on the left and the LED indicator is located towards the floor.** If the display is mounted in the opposite position, it will result in damage to the display that will not fall under warranty coverage.

The portrait upright brackets employ a latching mechanism with three positions. A tab located on the bottom of each bracket is used to adjust the latch position as shown on the next page. Each position is also illustrated on page 8 of the portrait mount's installation guide.

Using the Portrait Upright Brackets

When the tab is the lowest position, shown on the left, the bracket rests against the bottom rail and pushes the bottom of the display outward for service access. Moving the tab to the middle position opens the slot and allows the latch to move into place on the bottom rail. Push the tab to its highest position (as shown on the right) and the bracket locks onto the bottom rail. A pad lock is not recommended because it can prevent service access. A hex bolt is used by the MICROS contract installer and is recommended.

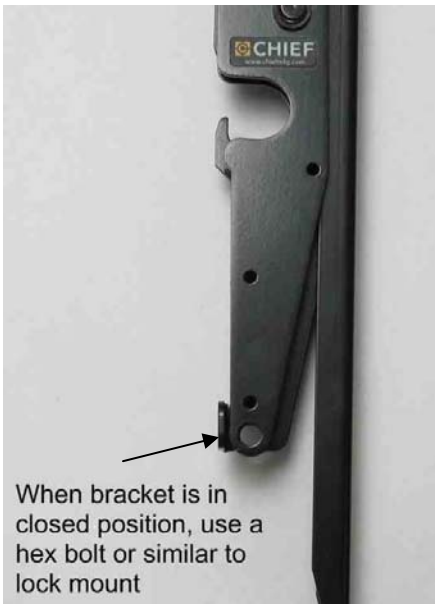

Pushes Display Forward
Tab in lowest position for service access
Bracket open for attachment to bottom rail
Tab in middle position moves bracket onto bottom rail
Bracket in locked position on bottom rail
bottom rail
Tab in highest position locks bracket to bottom rail
Mount can be locked with Hex Bolt

Portrait Mount Tilt Setting

The portrait display upright brackets can tilt the display for the best viewing angle. When the display is hung on the mount, reach up and turn the knobs to loosen. The knobs will turn in opposite directions. When moving the display in to its tilt position, use one hand to support the top front bezel of the display to prevent it from tilting forward in a jerking motion.

When the portrait display is at the desired angle, tighten the knobs to lock it down. If the tilt is on the lowest position and both knobs cannot be reached, tightening one knob should be sufficient.

Locking the Portrait Display



The portrait mount can be locked when the tab handle is pushed in to its highest position to hold the bracket on to the mount. This lines up the holes on the bracket so that it can be locked. As with the landscape mount, a hex bolt or similar is recommended to lock the bracket for easier service access.

Installing and Cabling the DDC

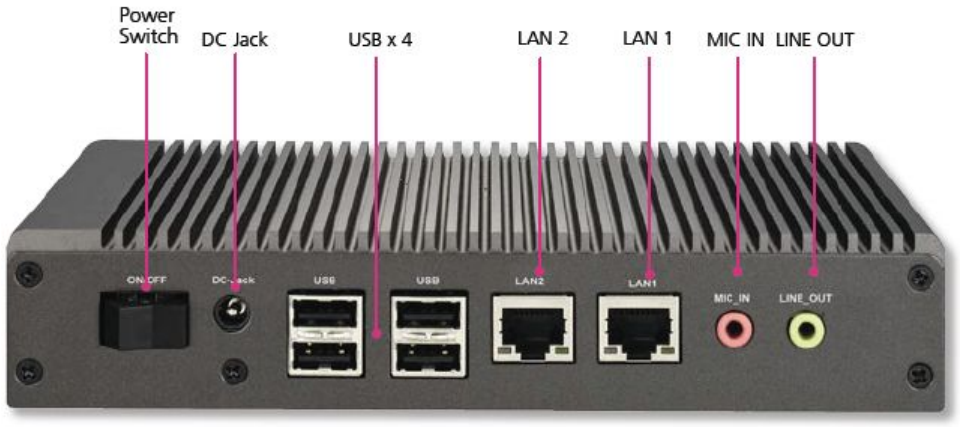
Attach the DDC to the “L” bracket with the supplied screws. Position the power supply below the DDC and secure with a tie-wrap. The figure below shows the DDC and power supply attached to the “L” bracket.

When attaching the “L” bracket to the rail bracket, the DDC heat sink should face the wall. This places the DDC power switch near the outside edge of the display on the landscape mount relative to where it will be positioned on the display mount.

WARNING: A proper Windows shutdown to the DDC is required! Using the on/off switch to shut down the DDC is equivalent to a loss of power. This can cause corruption on the CF.

DDC I/O Panel

The illustration below shows the DDC power switch, DC Input, USB and two LAN connectors. Be sure to use the LAN 1 connector in all configurations, the LAN 2 connector is disabled in the BIOS. The VGA and DVI connectors and two DB9M COM port connectors are located on the opposite side. The COM port connectors are not used.



Single Display System

In a single display system, the DDC requires the following connections:

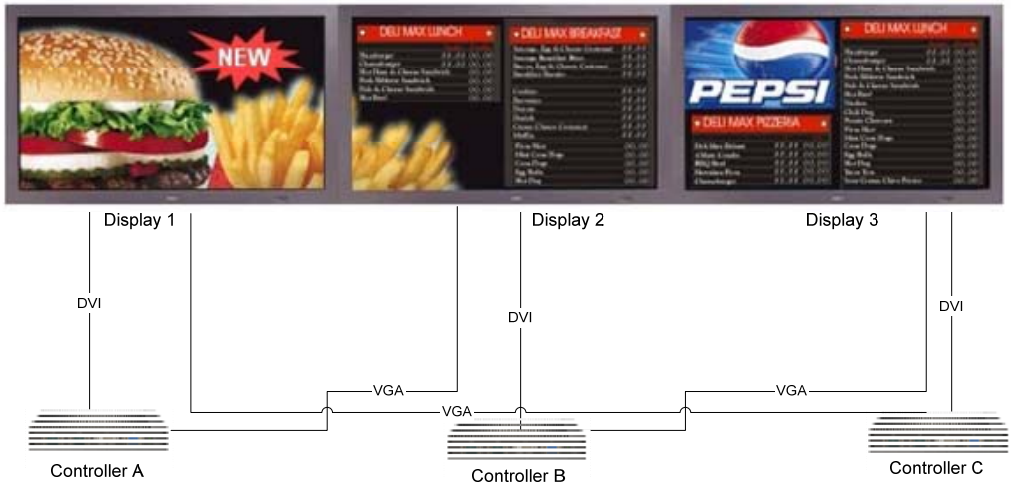
- DVI or VGA (DVI preferred)
- Network
- AC Power

Redundant Display System

In a redundant controller setup, the DDC requires the following connections:

- DVI
- VGA
- Network
- AC Power

To cross connect from the DDC to the displays for redundancy, connect the DVI cable to display that the DDC is sitting directly behind. Connect the VGA to the neighboring display. The display on the end will connect to the first display as illustrated below.



If the distance between the first display and the last DDC is greater than 10 feet, a 25' VGA cable is available (MICROS part # 700503-074). If the displays are not butted against one another, conduit can be used to conceal the cable. 2" diameter conduit should be used at a minimum.

In a redundant configuration, an equal number of displays and DDCs are required. Connect the DVI output of the DDC to the display directly in front of it.

Cable Management

The Illustration on the right shows a typical landscape mount configured for redundancy. This includes the power protection device and DDC configured with VGA and DVI cabling.

Be sure to zip tie all cables as neatly as possible to optimize space behind the displays. Enough space is provided behind the display if the cables are managed properly. Be sure to position the cables so that the display does not pinch the cables when in the locked position.

Service Access

Prior to accessing any hardware for service, if the display is tilted out, reach up and loosen the tilt knobs to move the display into the highest possible position.

Then, tighten the tilt knobs back down for easier access. If the knobs can't be accessed, follow the procedure below while the display is still tilted out but note that the displays center of gravity will be altered.

When access is required to service a controller, a service technician can pull down on two straps behind a landscape mount or pull down the tab handle on the portrait mount and pull the bottom of the display forward.

By pulling out on the bottom of the display and letting go of the straps on the landscape mount or pulling the tab handle to the bottom most position on the portrait mount, the bottom of the display will rest against the bottom rail while the top rail acts like a hinge and is still securely suspending the display. This creates more space and allows for easy access behind the display to remove the controller.

More information in the NEC User Manuals

The NEC P401 and P461 User manuals can be found on the MICROS Hardware Portal at https://portal.micros.com/sites/hardware/3rdparty/Document%20Library5/1/P401_P461.pdf. Useful feature information can be found on the following pages:

Control Key Lock Mode (lock out display buttons) – Manual Page 9
On-Screen-Display Controls – Manual Page 19
Remote Control ID Function – Manual Page 27
Handling of the Address for Operation via a Browser (Set IP address) – Manual Page 33
Troubleshooting - Manual Page 34

Section 2: Setting the Graphics on the Digital Display Controller (DDC)

Graphics Modes

There are several options for setting graphics on the DDC including single display modes. There are two modes that will allow users to take full advantage of the DDC's capabilities. For RES 4.7 and higher, Extended Desktop mode will take advantage of RES' ability to display information across two displays from one DDC. This will allow for redundancy if either a DDC or a display fails.

RES 4.3 – 4.6 does not accommodate extended desktop however Dual Display Clone mode will send the same signal out of both of the DDC's video ports, allowing for display redundancy.

Redundancy information is detailed in Section 4.

Video Settings on the DDC

The factory graphics setting on the DDC is Dual Display Clone, meaning that if both DVI and VGA are connected at startup, the same image will appear on both displays.

Depending on what connections are plugged in and what specific displays that they are connected to, the graphics controller may read the displays and set itself in a different mode. For instance, if VGA is the only graphics connection, the graphics controller may set itself for "Monitor" only. If the DDC is connected to a lower resolution monitor, the graphics setting will lower to that monitor's settings.

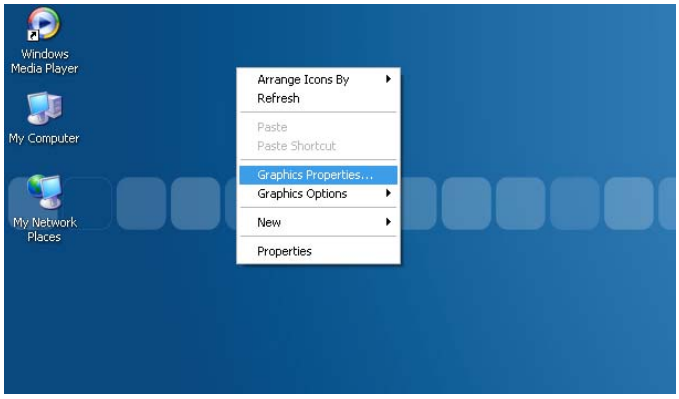
If DVI is connected and a splash screen appears and then the displays goes blank, try connecting to VGA to see if it is reading the VGA connection only. The graphics can then be changed as desired using the following instructions.

IMOPORTANT NOTE: It is common to set display settings by right clicking on the desktop, selecting "Properties" using the Settings tab to set the display properties. These are Windows graphics settings and WILL NOT WORK to properly set up displays for the MICROS Digital Menu & Marketing System. Please follow the instructions below for stable graphics settings.

Setting Extended Desktop

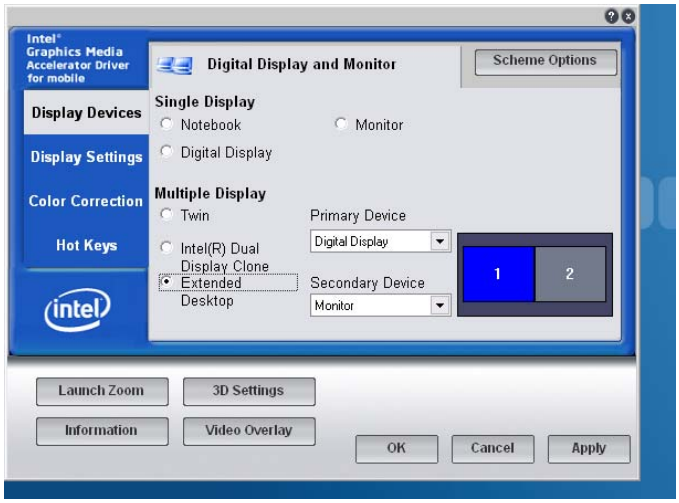
To set up the MICROS Digital Display Controller for redundancy, the RES v4.7 or higher menu board viewer must be set for Extended Desktop. To set the system for Extended Desktop, a USB keyboard must be connected to the Digital Display Controller.

1. Right-click on the desktop and select ”Graphics Properties”

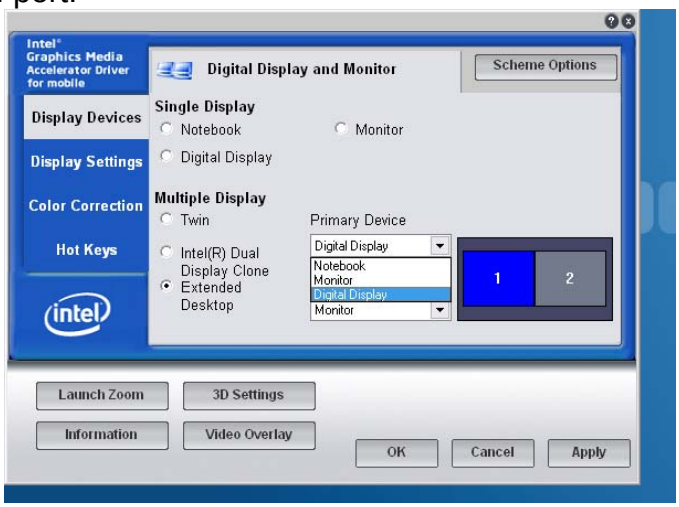


The Intel Graphics Media Accelerator screen will appear

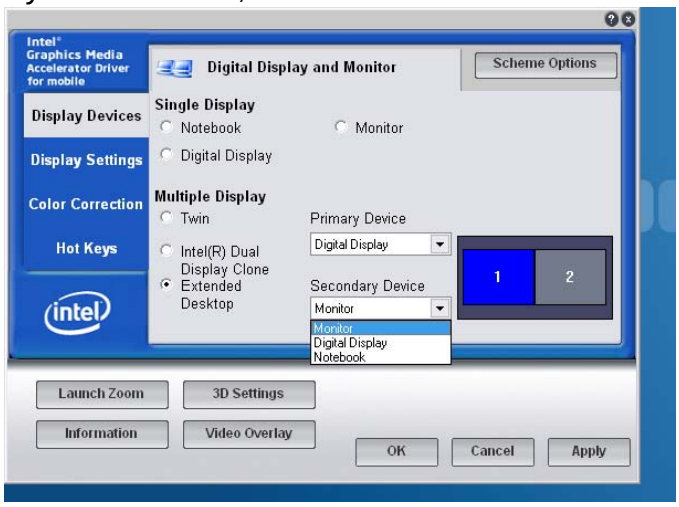
2. Select the “Extended Desktop” radio button



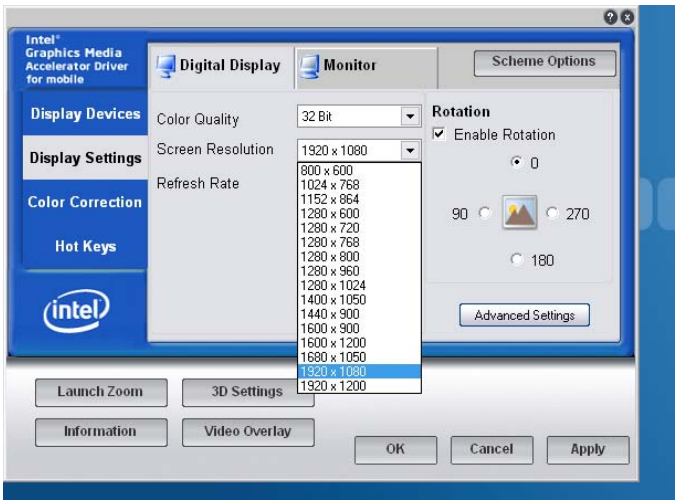
3. In the Primary Device pull down menu select “Digital Display”. This is the output to the DVI port.



4. In the Secondary Device Menu, select “Monitor”. This is the output to the VGA port.



5. Select the Display Settings tab on the **left**
6. On the Digital Display tab at the top, be sure the Color Quality is “32 Bit”
7. For Screen Resolution, select “1920 x 1080”
    a. This is the native resolution for the NEC displays. If this setup is being performed on a different monitor, this resolution may not be available.

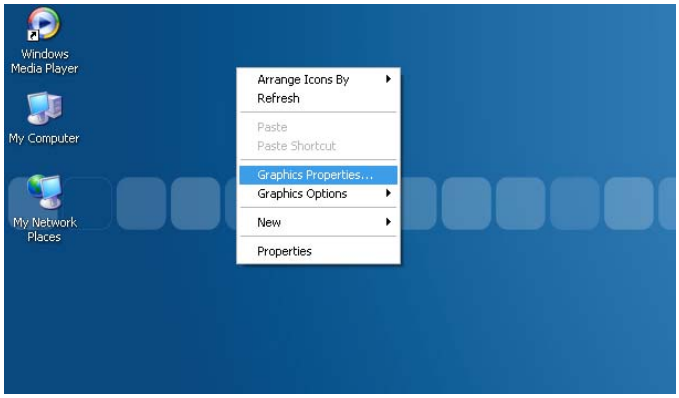


8. Select the Monitor tab at the **top** and follow steps 6 & 7 again to set the VGA output.
9. Click on the “Apply” button to save your settings.
10. A confirmation box will provide 15 seconds to confirm these settings. Click on “OK” in this box within the 15 second time period or the display settings will revert back to the original settings and these steps will have to be performed again.

Setting Intel Dual Display Clone

The Intel Dual Display Clone setting will send the same video image out both the DVI and VGA ports of the Digital Display Controller. This is advantageous if a display fails and there is a second display. If the video output of a Digital Display Controller is going to more than one display, there is a choice of which display the video image can be shown on. To set Intel Dual Display Clone, use the following steps:

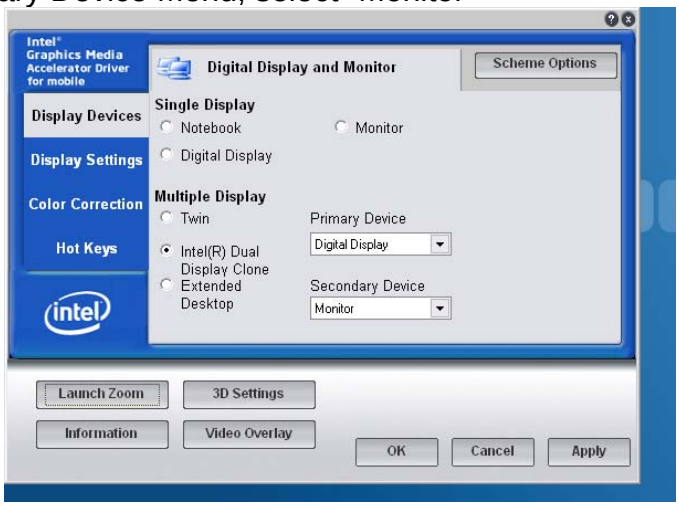
1. Right-click on the desktop and select ”Graphics Properties”



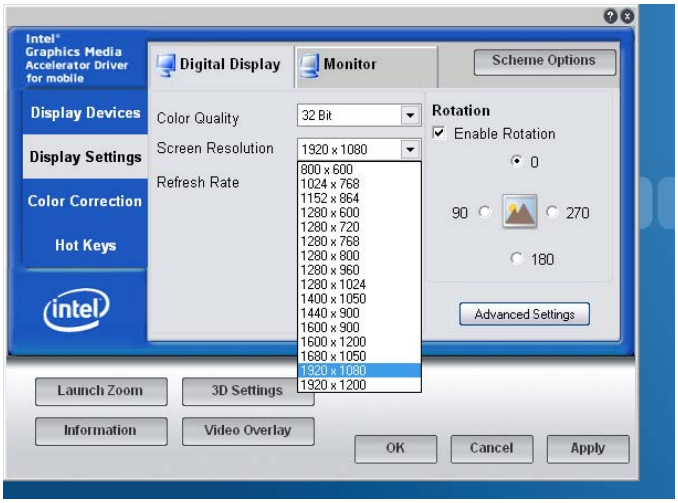
The Intel Graphics Media Accelerator screen will appear
2. Select the “Intel(R) Dual Display Clone” radio button

NOTE: Do not use the “Twin” video setting. It is not well suited for use with digital signage.

3. In the Primary Device pull down menu select “Digital Display”
4. In the Secondary Device Menu, select “Monitor”



5. Select the Display Settings tab on the **left**
6. On the Digital Display tab at the top, be sure the Color Quality is “32 Bit”
7. For Screen Resolution, select “1920 x 1080”
    a. This is the native resolution for the NEC displays. If this setup is being performed on a different monitor, this resolution may not be available.



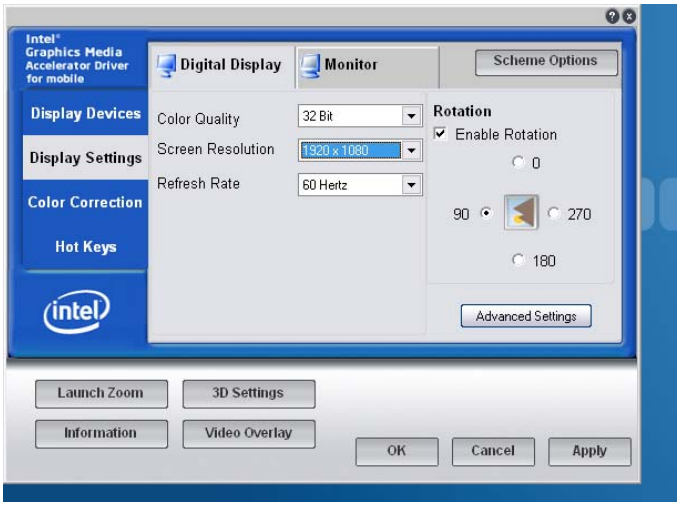
For Intel Dual Display Clone, resolution does not have to be set for the secondary display (Monitor). The resolution of the secondary display will default to the resolution setting of the primary display.

8. Click on the “Apply” button to save your settings.
9. A confirmation box will provide 15 seconds to confirm these settings. Click on “OK” in this box within the 15 second time period or the display settings will revert back to the original settings and these steps will have to be performed again.

Setting for Portrait Display Orientation

First, follow the above instructions for your choice of either Extended Desktop or Intel Dual Display Clone.

1. After you have completed steps 1-7 above, select the display tab. On the right, there will be a check box for “Enable Rotation”. Check this box and select the 90 radio button.



2. Perform the same function in the Monitor tab.

3. Click on the “apply” button to save the settings. The display(s) will change orientation at this point.

NOTE: Now, the resolution will reverse from, for instance, 1920x1080 to 1080x1920. Set the menu boards up in RES with these resolution settings in mind.

4. A confirmation box will provide 15 seconds to confirm these settings. Click on "OK" in this box within the 15 second time period or the display settings will revert back to the original settings and these steps will have to be performed again.

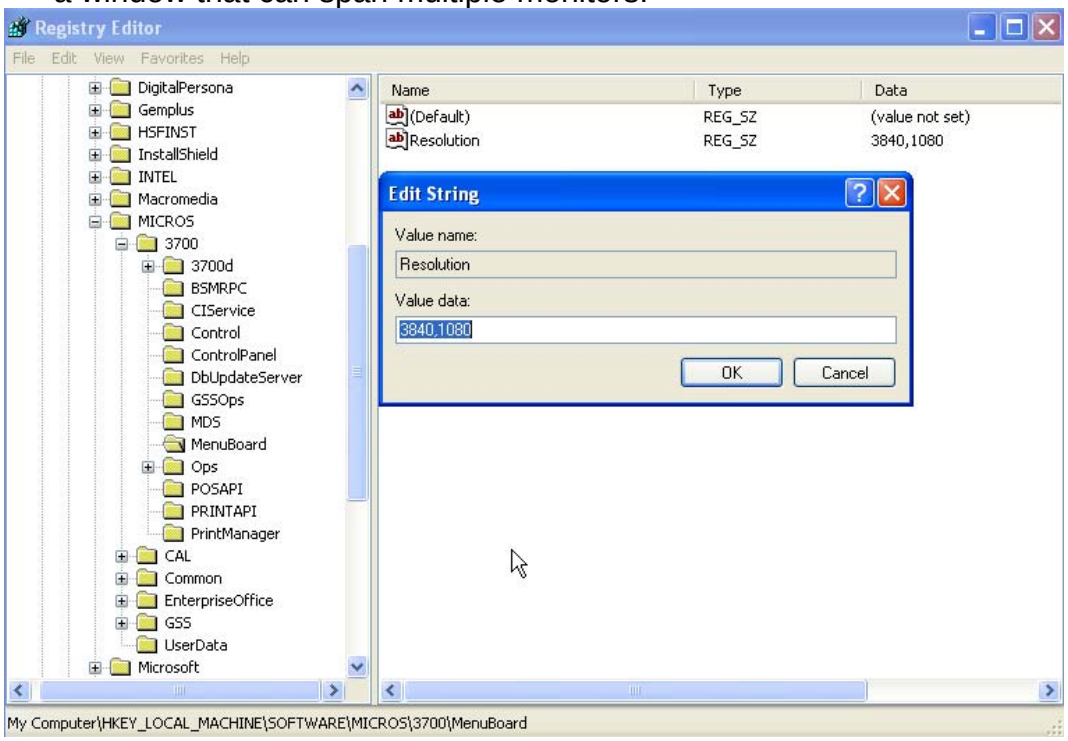
Section 3: RES Extended Desktop Setup

To setup the RES 4.7 and higher Menu Board Viewer to work in Extended Desktop mode, the Menu Board Viewer registry settings must be set. First, set the DDC for Extended Desktop, as outlined in Section 2.

This section only applies if RES 4.7 and higher is being used and redundancy is being implemented in a given installation.

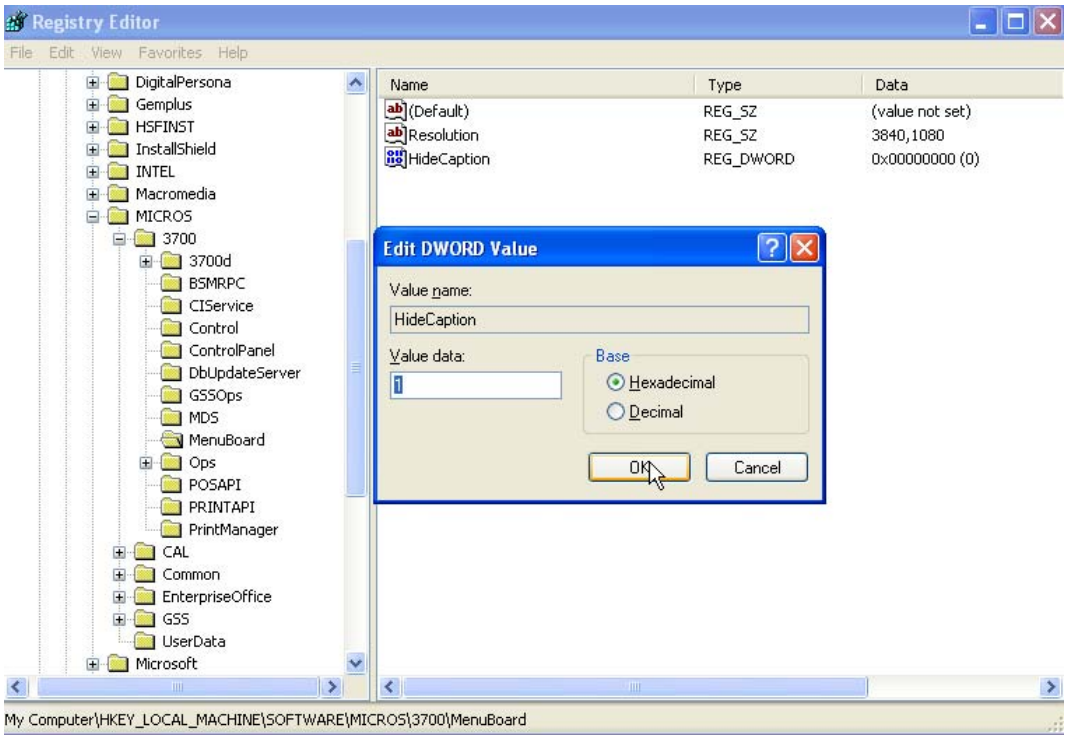
The Menu Board Viewer Registry settings (*HKLM/Software/Micros/3700/Menu Board*) are:

1. Resolution – String in format cx, cy; Used to display Menu Board Viewer in a window that can span multiple monitors.



The total native resolution menu board area for extended desktop with NEC displays is 3840x1080. If the customer is not using displays supplied from MICROS, you must know the resolution settings of the displays that are being used.

2. HideCaption – DWORD; Set to 1 to hide the title bar of the Menu Board Viewer when used in conjunction with resolution setting.

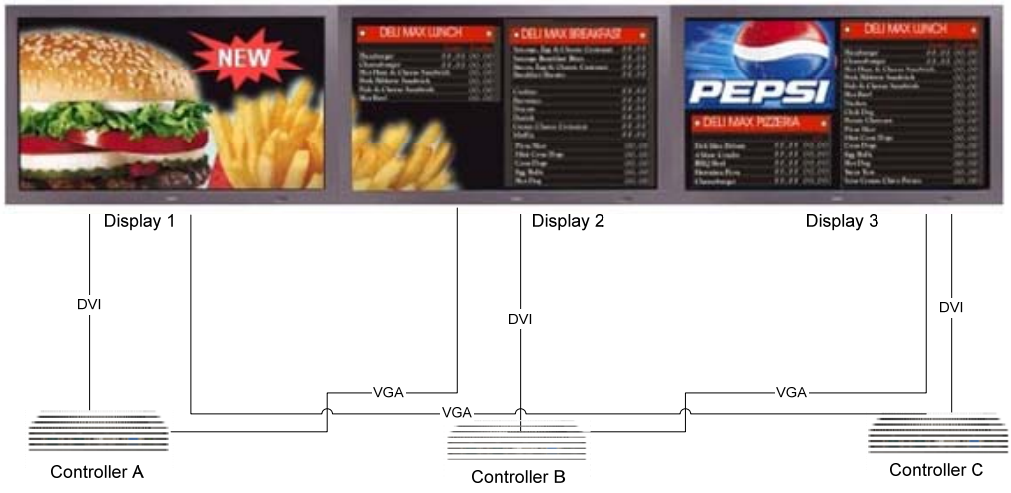


Section 4: Controller & Display Redundancy

Controller Redundancy

Controller redundancy can be accomplished with the combination of the DDC and NEC displays. After following the instructions to set the Intel graphics controller and setting RES 4.7 and higher for extended desktop, as outlined in Section 3, the output from the DVI and VGA port together will be seen by the controller as one continuous image across two displays. The content from each controller would be laid out across two displays (illustrated below).

Redundancy would require one controller per display where the controller outputs are cross-connected to the display inputs. The example below shows a three-display setup however, other than keeping video cable lengths in mind, the number of displays is not really limited.



DVI Output VGA Output

Controller A's Content

DVI Output VGA Output

Controller B's Content

DVI Output VGA Output

Controller C's Content

In the illustration above, the primary content (DVI output) from Controller A would be seen on Display 1. Controller A's secondary content (VGA output) would be displayed on Display 2. When all systems are operating normally, the actual content that would be seen on Display 2 would be from Controller B. So, each full image goes across two displays however the secondary content (VGA output) would not be shown because the active video is being received through the DVI port. This way, if one controller fails, the image that is running from the neighboring controller can still be displayed and is exactly the same as what was being received from the controller that failed.

The display will automatically detect that there is no longer a signal coming in to the DVI port and would look for another signal, which would be the VGA signal from the neighboring controller. The fail over should take less than 5 seconds.

When creating images, it is recommended that there be a small indicator to show which image they are looking at. It could be a small colored block in the corner of the display or a letter such as "L" for left controller and "M" for middle, or a numbering scheme. So, if a manager can see a #2 on their #1 display, they will know that the controller directly behind the display is not the controller sending the signal to that display. A different background color will serve as a more prominent indicator. There is no current provision to serve as an alert when a DDC fails.

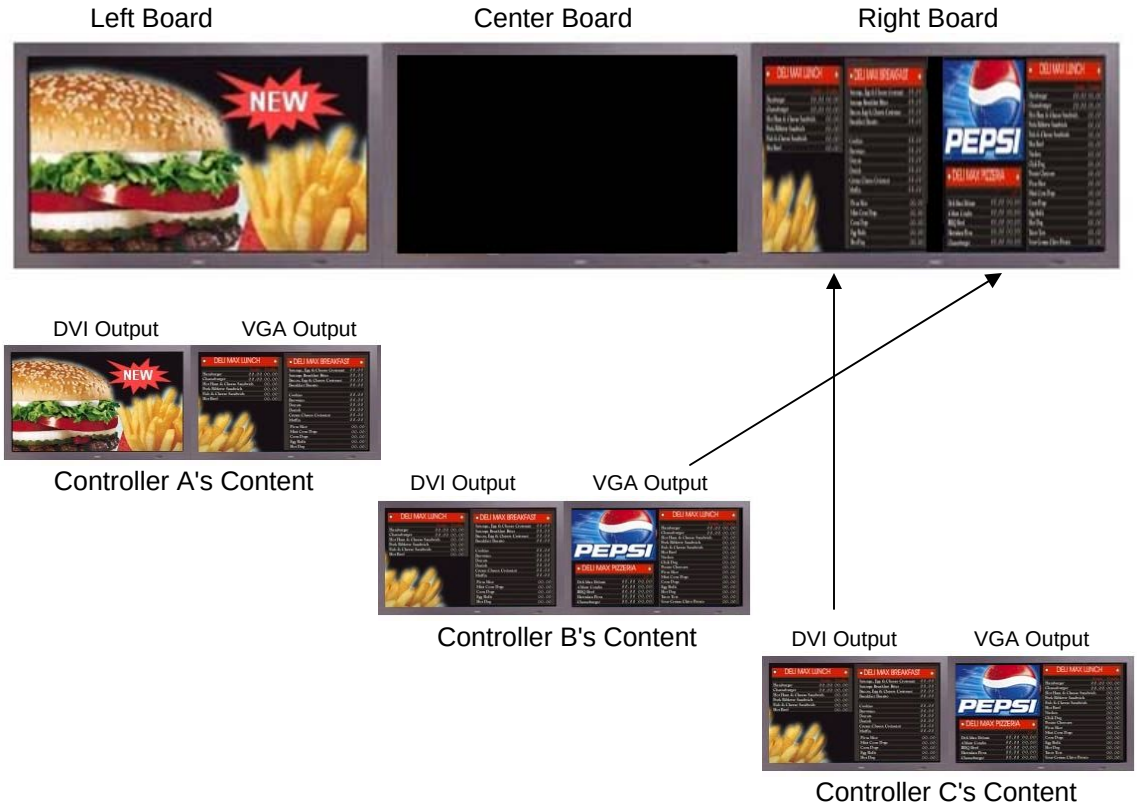
Setting Displays Back to Original Setting After a DDC Has Been Replaced

When a DDC has been replaced the video cables are connected to the displays note that a display will not automatically see the DVI connection and change to that input. Use the display's remote control to select the DVI input.

Point the remote at the display that you are changing and press the DVI button on the top left of the remote control just below the green Power On button. The display will change its input and indicate in its top right corner that it is receiving its video signal from the DVI input.

Display Redundancy

If a display fails, the image that was being shown on that display can be moved so that it can be viewed on another display. This is assuming that the digital display controllers are set in Extended Desktop mode and that all Digital Display Controllers are still functional.



Using the example above, if the Center Board fails, the image on that display may be a higher priority than the information on the Right Board. RES POS Configurator can be used to push down Center Board menu board file to Controller C (see Using POS Configurator to Move Files/Images below). Now the DVI output on Controller C is the image that was on the Center Board. The VGA Image is still the same as was on Right Board because it is coming from Controller B.

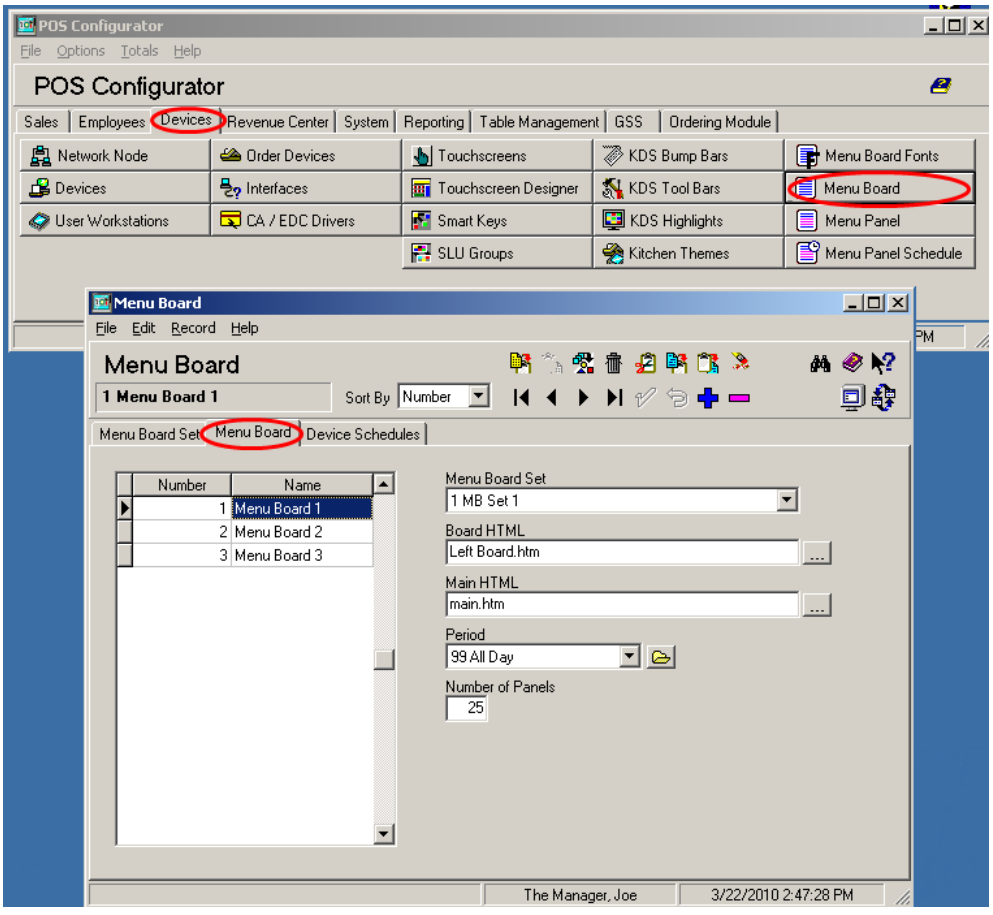
The restaurant has the option of using the display's picture-in-picture mode to split the Right Board's inputs in half and display both the DVI and VGA input. This can be easily accomplished with the display remote. The images would be compressed to fit the screen as seen above.

If the graphics controller on the DDC is set for Dual Display Clone and the displays are cross-connected no change would be required if a display fails. Different images would already be received in each display's DVI and VGA ports. The display input can then be changed using the remote control or the display can be split using picture-in picture mode. See the "Setting the Display for Picture-in-Picture Mode" portion of this section (below) to change the display's input setting to receive two inputs at once.

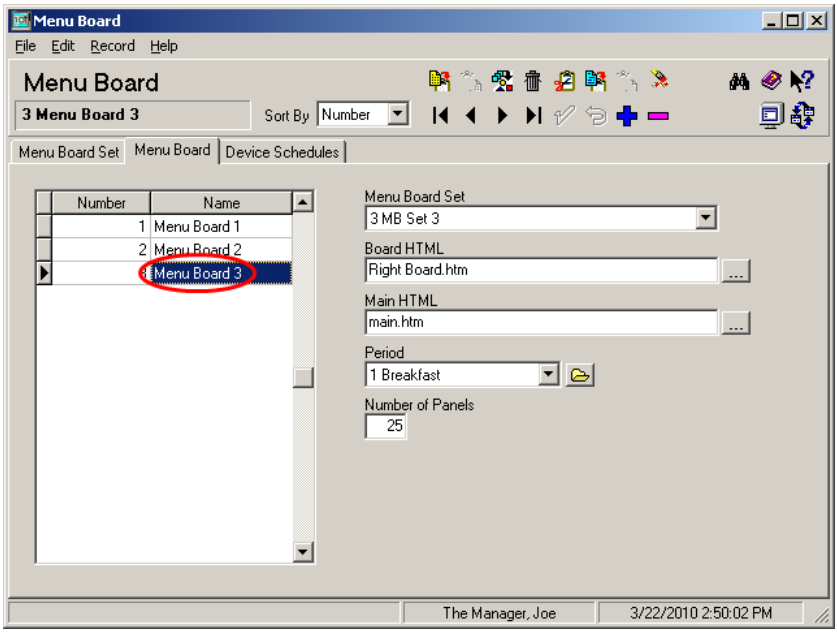
Using POS Configurator to Move Files/Images

The following instructions detail how to use RES POS Configurator to change files on the Digital Display Controller in the event of a display failure. This applies to RES 4.7 and higher installations where the images have been set for Extended Desktop, as outlined in sections 3 and 4.

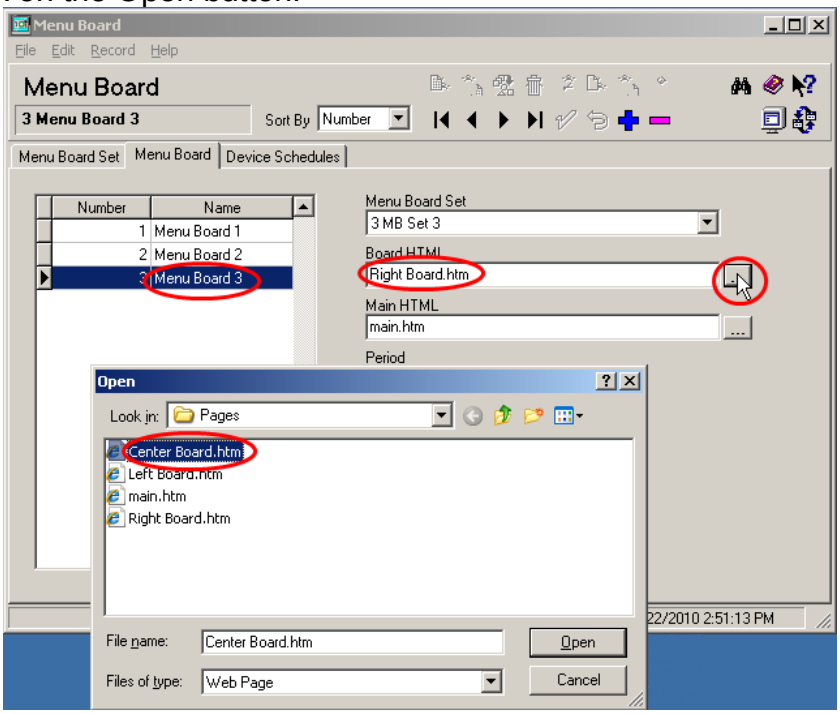
1. In POS Configurator go to the Devices tab and select Menu Board.
2. In the Menu Board screen, go to the Menu Board tab. The list of display devices should be visible. The Digital Display Controllers should be on this list. In the example below, they are named Menu Board 1, Menu Board 2 and Menu Board 3.



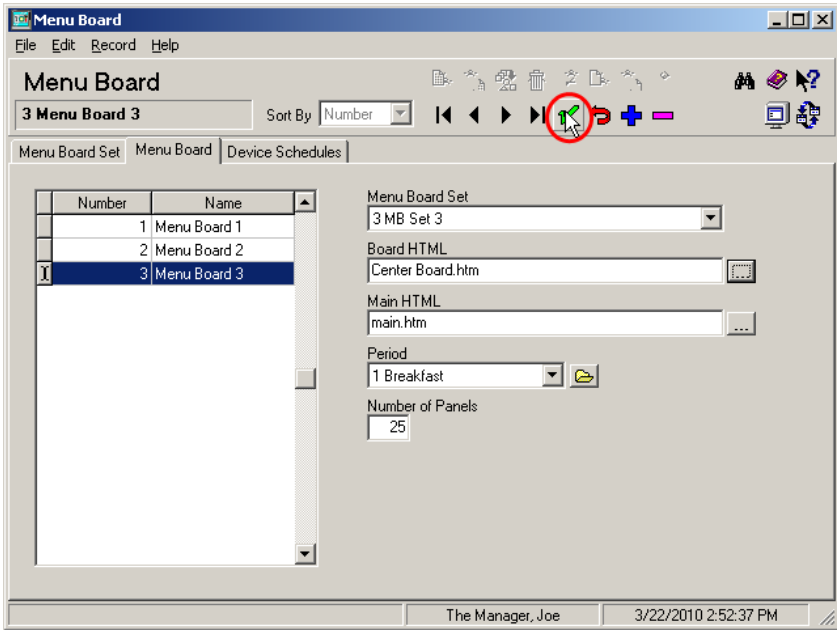
3. Highlight the controller that you want to move the image to. In the example below, it is named “Menu Board 3”.



4. Once Menu Board 3 is highlighted, click the button next to the Board HTML field. Note that Right Board is the current file that is associated with Menu Board 3. When the window to open a new file appears, select the file that is the same as is running on Menu Board 2, which is Center Board. Click on the Open button.



5. Once that file name is on the Board HTML field, select Save (green check mark).



It will take approximately 1 minute for the change to show up on the other display.

If your customer is using the “Intel Dual Display Clone” feature in the Setting the Graphics Controller section of this Setup Guide, no changes in menu board files would be required. Different images would already be received in each display’s DVI and VGA ports.

The Picture-in-Picture features of the display can be used from the display remote control to split the display, if desired. See below for details.

6. Once the failed display has been serviced/replaced follow steps 1-5 of this section to select the file that was originally being displayed.

Setting the Display for Picture-in-Picture Mode

To split the display using Picture-in-Picture mode, use the display's remote control to divide the display in to two equal windows.

The PIP (picture-in-picture) button will activate picture-in-picture on the display that the remote control is pointed at.

1. Press the PIP button four times to get to the PIP mode that splits the display in to two equal size windows.
2. Use the Input button to select which input the second half of the display should be receiving video from. The input settings will appear on the bottom right corner of the display.
    a. Press the button until the input is VGA.
3. Once the display has video from both ports running, use the Change button to reverse the positions of the two pictures, if desired.
4. To exit picture-in-picture mode, press the PIP button again and the display will revert back to its primary input.